

What is claimed is:

1. A ZnO system semiconductor device comprising one or more layers of n-type layer and p-type layer respectively, characterized in that at least one layer of said p-type layers is (are) formed of a Zn-polar ZnO system semiconductor film doped with nitrogen atoms, such that the thin film growth direction of said Zn-polar ZnO system semiconductor film is conformed to the direction of Zn polarity (0001).
2. The ZnO system semiconductor device according to claim 1 characterized in that the underlying layer at the time of formation of said Zn-polar ZnO system semiconductor thin film is a Ga-polar GaN system thin film, a Zn-polar ZnO substrate or Zn-polar MgZnO thin film.
3. The ZnO system semiconductor device according to claim 1 characterized in that nitrogen atom concentration of said Zn-polar ZnO system semiconductor thin film is  $1 \times 10^{20} \text{ cm}^{-3}$  or more.
4. The ZnO system semiconductor device according to claim 2 characterized in that nitrogen atom concentration of said Zn-polar ZnO system semiconductor thin film is  $1 \times 10^{20} \text{ cm}^{-3}$  or more.